Abstract

A speech signal processing approach modifies the amplitudes of pulses within a multi-pulse sequence to improve and/or modify the perceived quality of reconstructed speech. According to one embodiment that is consistent with the present invention, an input frame processing arrangement generates the short-term characteristics of an input speech signal and also a target vector. The processing arrangement includes an analyzer that operates to provide an optimal analysis, from a maximum-likelihood standpoint, with respect to determining the best possible pulse sequence to match the target. The analyzer receives the target vector and the short term characteristics and generates a plurality of sequences of variable-amplitude pulses, each of said sequences having a different average amplitude value. The analyzer is further adapted to output a signal corresponding to a sequence of either equal-amplitude or unequal-amplitude pulses which, according to a maximum likelihood criterion, would closely represent the target vector.